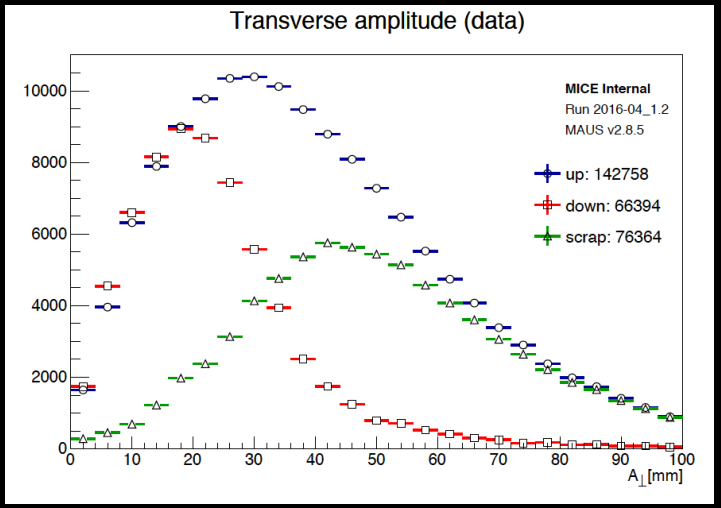
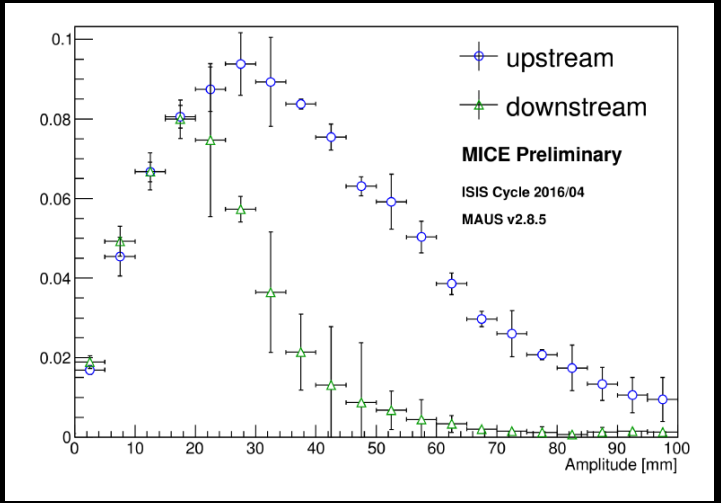
Imperial College London

Science & Technology Facilities Council

Closing remarks

K. Long, 29 June, 2017





CM48

- **Excellent progress:**
  - Demo paper published:
    - Focus now on pulication of data
  - Attention to detail in reconstruction/analysis impressive:
    - E.g. track fit, tracker efficiency
  - Emittance measurement and scattering measurement "on the way"
  - Emittance evolution/cooling:
    - On the cusp of providing robust evidence of cooling;
    - Devil now in the detail, in particular:
      - Systematic error vs. correction
- **Issues:**
  - Still some gremlins in reconstruction:
    - Track-finding efficiency
    - Speed of globals; what is efficiency etc.?
  - Still unclear to me that "track swimming" is readily done by non-experts:
    - Essential for the analysis (apperture definition)
  - Simulation:
    - Beam much better, but still needs some improvement
    - Speed no longer an issue, now able to focus on detail

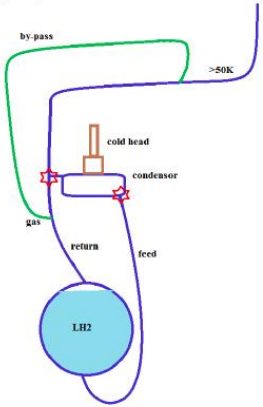
CM48

- Principal (only) construction project:
  - LH2 system
- Going well!
  - But no slack
- Status:
  - Refurbished turret installed in FC in Hall
  - Connections and leak checking now to come
- Goals:
  - Initiate 3rd neon liquifaction cycle within the next fortnight
  - LH2 liquifaction before the end of July!

Recondensor turret, by-pass

Original turret

Changed turret

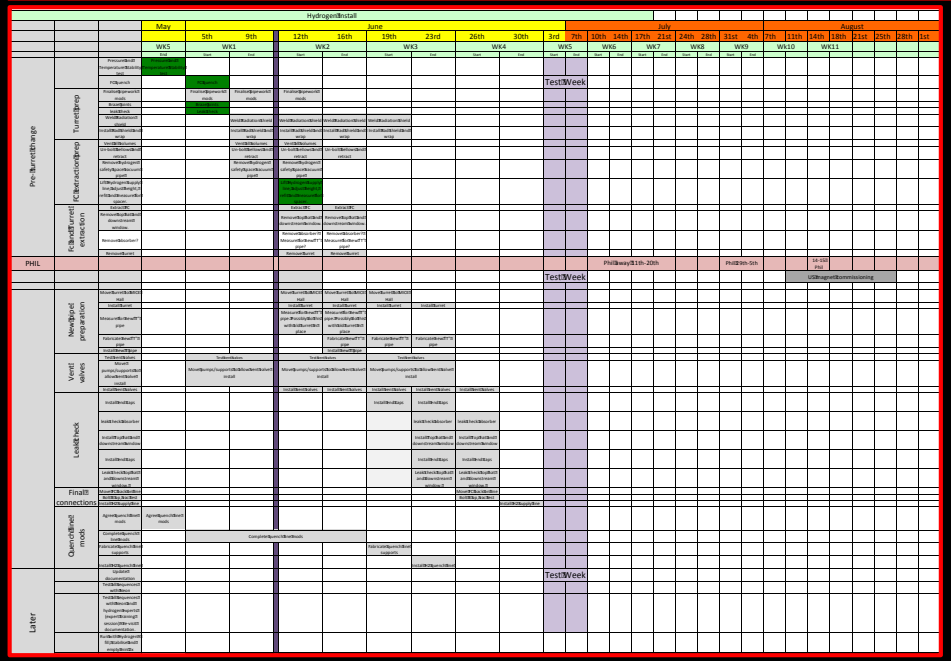


The pipe in the middle is the by-pass pipe between the hydrogen absorber at 20K and the return pipes at 50K: no freezing possible as contact to cold head is avoided

The change-over is underway presently

The programme for summer/autumn 2017

ISIS Cycle	From	To	MICE Step IV Programme	Absorber
2015/04	16-Feb-16	25-Mar-16	Field-off scattering	Lithium-hydride
2016/01	12-Apr-16	20-May-16	QD/QP upgrade	Lithium-hydride
2016/02	28-Jun-16	29-Jul-16	Magnetic-channel commissioning	Lithium-hydride
2016/03	13-Sep-16	28-Oct-16	Field-on scattering	Lithium-hydride
2016/04	15-Nov-16	16-Dec-16	Solenoid-mode emittance evolution	Lithium-hydride
2016/05	14-Feb-17	31-Mar-17	Flip-mode emittance evollution	Lithium-hydride
2017/01	02-May-17	02-Jun-17	Emittance evolution/scattering	Liquid hydrogen
2017/02	11-Jul-17	04-Aug-17	Cancelled/postponed	
	19-Sep-17	27-Oct-17	Emittance evolution/scattering	Liquid hydrogen
2017/03	14-Nov-17	20-Dec-17		



- By end Aug17:
  - LH2 system, magnets, tracker
  time pressure!
- Coordination critical
  - C. Whyte (PM)

Running in autumn 2017

Cycle 2017/02: Sep/Oct17:

- Data taking for *full* LH2 programme the priority
- Contingency plans for once LH2 programme complete:
  - Operation of M2 (optics better)
  - Return to LiH
  - Data taking with wedge

Cycle 2017/03: Nov/Dec17 (not yet requested):

- Consider when to ask formally to operate in 2017/03:
  - Based on success:
    - LH2 data (no M2) taken and of high quality;
    - M2 test successful;
    - Articulate substantial scientific gain from one additional cycle

Cooling demonstration

- Excellent discussions in light of contribution of Alexandre Zaitsev's contribution!
- Need to consider the way forward in broad context:
  - What should the ambition for a muon-accelerator R&D programme be "from 2018 and beyond"?
    - In Europe:
      - L. Rivkin (PSI), under a mandate from F. Ianotti: panel to consider future R&D for muon accelerators
        - » Chair: N. Pastroni (INFN Commissionne Uno)
        - » Will write a report that will be i/p to EU Strategy Update
- Cooling demonstration:
  - Essential component of muon-accelerator R&D programme
  - International support for such a programme;
    - Cooling demo – MICE or daughter of MICE – 4D or 6D – at RAL, at Protvino …
    - Role of other laboratories … in Europe (CERN), elsewhere …
- Near-term front-rank scientific programme:
  - nuSTORM
    - Engage with CERN PBC study!
      - Email/invitation to come over the summer

Future meetings

- Collaboration meetings:
  - 2017:
    - CM49 2nd to 4th October 2017 (RAL)
  - 2018:
    - Week of: 26th February 2nd March 2018
    - Week of: 26th June to 29th June 2018
    - 8th October to 12th Octiber 2018
- Next Video Conferences:
  - 3rd August 2017
  - 7th September 2017

Thanks to:

- You all for coming, presenting and arguing!
- The local team:
  - Dimitrije, Mihailo, Dejan, Nicola
- See you at CM49 at RAL in Oct17
- … my best wishes for a safe journey home …